

The objections to claims 2, 3, 9 and 10 advanced at page 3 of the outstanding final official action have been resolved by previous amendment of the claims. The objections to claims 1 and 15 regarding the deposit requirements have been resolved. The objection to claims 3, 4, 9, 10, 11, 15 and 55 under Rule 112, second paragraph, have been resolved.

The Examiner has objected to claims 3, 6-10, 15, 17, 19 and 55 under Rule 112, first paragraph on pages 3-8 of the final official action. In particular, the Examiner objected to claims 6, 7 and 19 on the ground that they claim a gene by its coding regions only. The objections are respectfully traversed.

As previously argued, in claims 6, 7 and 19, Applicants do not claim a naturally occurring gene, but claim a DNA fragment containing coding regions for TomL, TomM, TomN, TomO and TomT. Such a DNA fragment can be isolated from nature or can be an artificial or a recombinant fragment. The function of such a protein is defined solely by the region in coding the structure (the structural gene) and not by the non-transcription/non-translation regions, such as a promoter, terminator and spacer. In bacteria, particularly, genes are constituted as operons, which is a transcription unit comprised of a regulator gene and several structural genes. It is well known and understood that in such an operon each component is expressed with appropriate spacers. Thus, spacers are not essential and the promoter can be heterologous. Accordingly, once coding regions are identified, then the coding regions can be arranged with any appropriate spacers and promoters to be expressed properly.

The Examiner had objected to claims 3, 7, 9, 10, 15, 17, 19 and 55 under Rule 112, first paragraph on pages 5-8 of the Official Action, as not being enabling for the reasons recited therein. Applicants have now provided appropriate amendments to such claims in order to resolve the enabling rejection. In particular, appropriate coding regions have been recited. Withdrawal of the objections is respectfully requested.

The objection to claims 3, 6-10, 15, 17, 19 and 55 under Rule 112, first paragraph, as lacking description has been addressed by appropriate claim amendments.

The Examiner has noted in the Advisory Action that the term "mutant" is deemed indefinite. Without necessarily agreeing and solely to expedite prosecution, claims 9, 10 and 55 have been amended to omit that term.

The Examiner noted that the phrase "stringent conditions" in claims 3, 9, 10, 17 and 55 and the claims dependent on them, was deemed indefinite. That objection is respectfully traversed.

The phrase "under stringent (hybridization) conditions" is a well known and well understood expression to those of ordinary skill in this art. For example, this expression is present in the specification and/or claims of at least 59 patents issued in January, 2001 as follows:

6,168,785	6,171,790	6,171,843	6,172,214	6,174,705	6,177,269	6,180,769	6,180,768
6,168,797	6,171,794	6,171,857	6,172,216	6,174,714	6,177,273	6,180,353	6,180,776
6,168,920	6,171,796	6,171,860	6,172,218	6,174,869	7,177,401	6,180,358	6,180,850
6,168,933	6,171,800	7,172,187	6,174,676	6,174,992	6,177,406	6,180,379	
6,168,950	6,171,815	6,172,190	6,174,682	6,174,994	7,177,546	6,180,387	
6,169,174	6,171,835	6,172,199	6,174,701	6,175,057	6,177,615	6,180,602	
6,171,598	6,171,838	6,172,211	6,174,702	6,177,086	6,180,338	6,180,612	
6,171,781	6,171,840	6,172,212	6,174,703	6,177,244	6,180,339	6,180,766	

Corresponding sites in some of these patent specifications are as follows:

US 6,171,790, column 11, lines 26-34

US 6,171,794, column 2, lines 46-48

US 6,169,174, column 3, lines 9-10

US 6,168,920, column 3, lines 21-22

US 6,171,598, column 3, lines 17-18

Clearly, this expression is conventionally and broadly used in this art and is well understood. Therefore, the objection thereto should be withdrawn.

Applicants have endeavored to meet each of the objections raised by the Examiner in the final action. It is requested that this Amendment be entered. Further, it is respectfully requested that based on the above amendments and arguments that the final rejection be withdrawn, the claims allowed and the case passed to issue.

In any event, it is requested the amendment be entered because it complies with the suggestions advanced by the Examiner, resolves informalities and places the case in better form for possible appeal.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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Appendix

Application No. 09/430,029
Docket No.: 35.C13892

VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

--9. (Three Times Amended) An isolated DNA fragment containing a region encoding a toluene monooxygenase, wherein the region comprises a first sequence that hybridizes under stringent conditions to a hybridization probe of which nucleotide sequence consists of 463..1455 portion of SEQ ID NO: 1 or a complement thereof, [encoding a polypeptide TomL having an amino acid sequence of SEQ ID NO:3 or a mutant thereof,] a second sequence that hybridizes under stringent conditions to a hybridization probe of which nucleotide sequence consists of 1495..1761 portion of SEQ ID NO: 1 or a complement thereof, [encoding a polypeptide TomM having an amino acid sequence of SEQ ID NO: 4 or a mutant thereof,] a third sequence that hybridizes under stringent conditions to a hybridization probe of which nucleotide sequence consists of 1803..3350 portion of SEQ ID NO: 1 or a complement thereof, [encoding a polypeptide TomN having an amino acid of SEQ ID NO: 5 or a mutant thereof,] a fourth sequence that hybridizes under stringent conditions to a hybridization probe of which nucleotide sequence consists of 3428..3781 portion of SEQ ID NO: 1 or a complement thereof,

[encoding a polypeptide TomO having an amino acid sequence of SEQ ID NO: 6 or a mutant thereof,] and a fifth sequence that hybridizes under stringent conditions to a hybridization probe of which nucleotide sequence consists of 3810..4871 portion of SEQ ID NO: 1 or a complement thereof, [encoding a polypeptide TomP having an amino acid sequence of SEQ ID NO: 7 or a mutant thereof,] and the first to fifth sequences are aligned so that expressed polypeptides can form an active monooxygenase protein.

10. (Three Times Amended) An isolated DNA fragment comprising a region that hybridizes under stringent conditions to a hybridization probe of which nucleotide sequence consists of 234...443 portion of SEQ ID NO: 1 or a complement thereof, [encoding a polypeptide TomK, the polypeptide TomK having an amino acid sequence of SEQ ID NO: 2, or a mutant thereof]

55. (Four Times Amended) A recombinant DNA comprising a vector, a promoter, a first DNA fragment being the DNA fragment of any one of claims 6, 7 or 9, and a second DNA fragment, said second DNA fragment comprising a region encoding a polypeptide TomK having an amino acid sequence of SEQ ID NO: 2 and a property to enhance the toluene monooxygenase activity of a protein comprised of at least TomL to TomP; or a region that hybridizes under stringent conditions to a hybridization probe of which nucleotide sequence consists of 463..1455 portion of SEQ ID NO: 1 or a complement thereof, [encoding TomK or an active mutant thereof,] wherein the first DNA fragment containing a toluene monooxygenase encoding region of 4.9 kb or less is

functionally connected to the promoter to express an active toluene monooxygenase, and the second DNA fragment is functionally connected to the promoter to express a property to enhance the toluene monooxygenase activity.--

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